

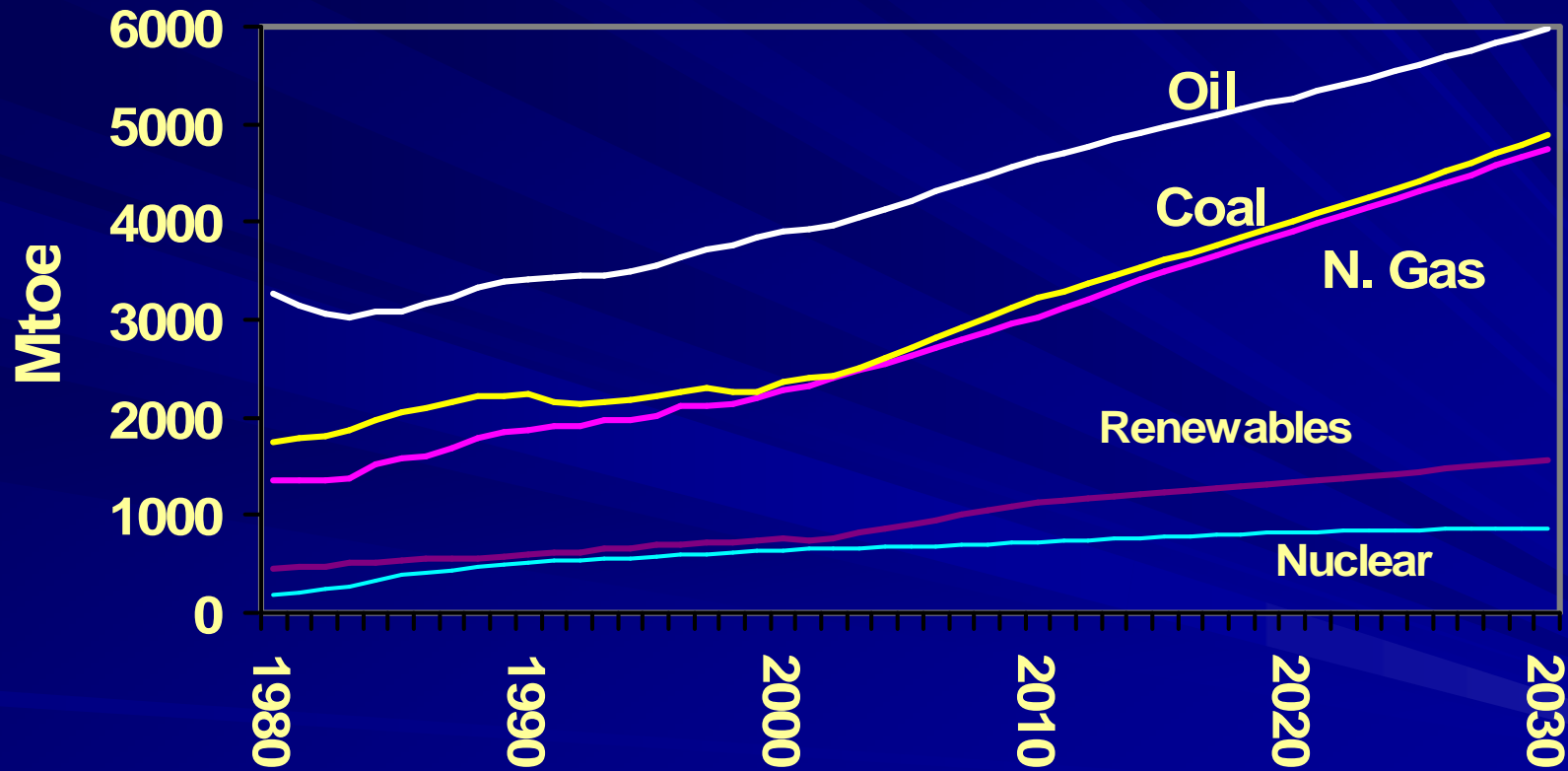
Saudi National Energy Efficiency Program (NEEP)

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Global Energy Efficiency 21 (GEE21)
Steering Committee of the Energy Efficiency 21 project,
3-5 June 2009

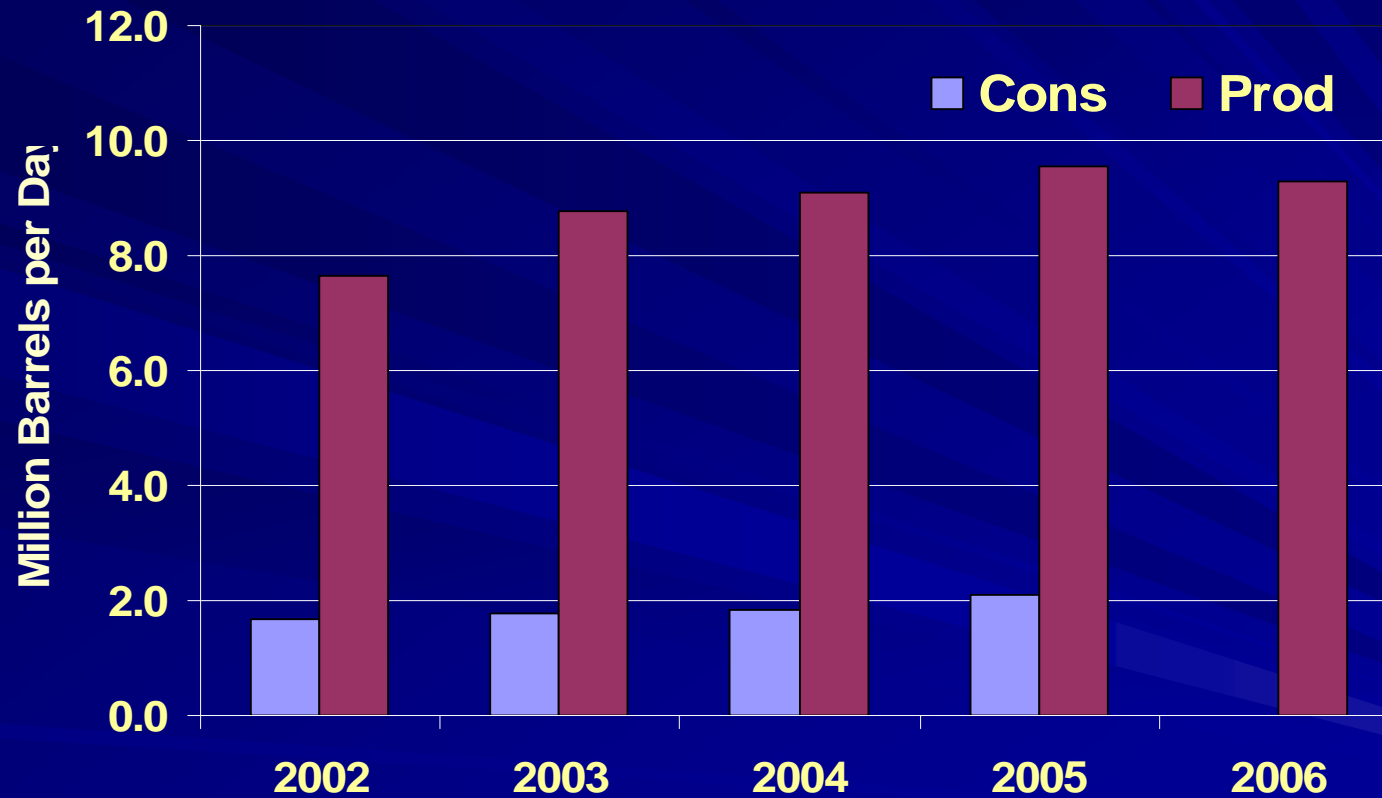
World Energy Use



Source: IEA "International Energy Outlook 2006"



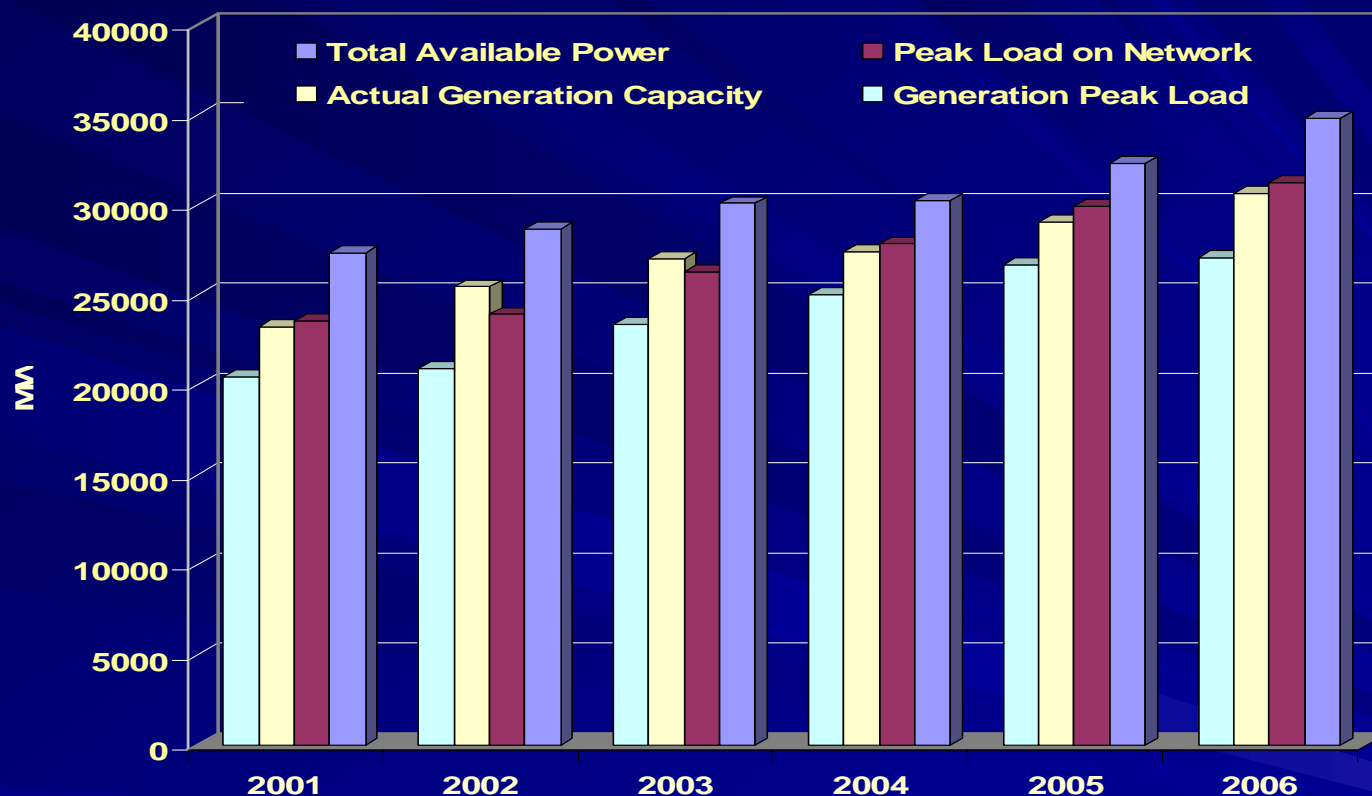
KSA Oil Consumption & Production



Source: IEA "International Energy Outlook 2006"



Development of Power Capacity and Peak Load in KSA



Source: MOWE, Electricity Growth & Development in KSA, 2006



KSA Electricity Indices, 2006

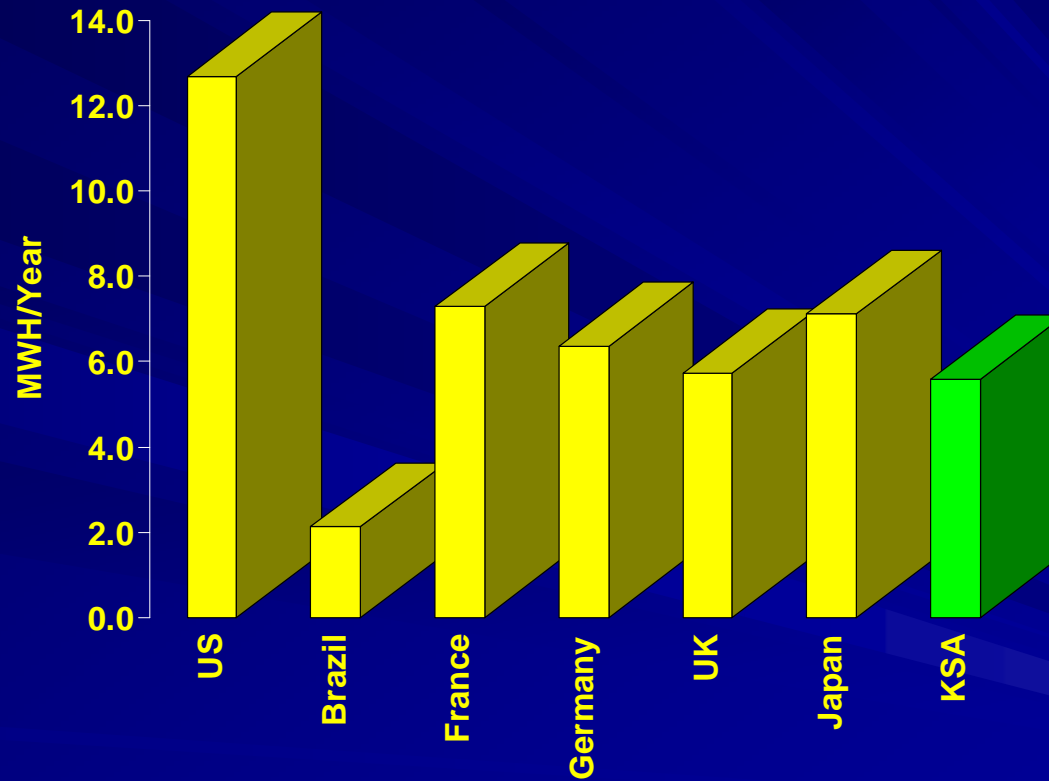
| | |
|--|--------|
| Population | 23.0 M |
| Total Electrical Energy Sold, TEES (TWh) | 163.1 |
| TEES per Capita (kWh) (2005) | 6,740 |
| TEES per Capita (kWh) (2006) | 7,091 |
| Increase in TEES 2001-2006 | 30% |

KSA Electricity Sector Highlights

- Increased consumption of petroleum products
2002-2005: 10%
- Increased electric peak demand
2001-2006: 30% (6% annually)
- Installed electrical capacity end 2005: 34.4 GW
- Additional capacity needed end 2023: 35 GW¹
- Generation investment needed end 2023:
SR 55 billion¹ (\$US=SR 3.75)

1: Source ECRA Updated
Generation Planning for Saudi
Electricity Sector, 2006

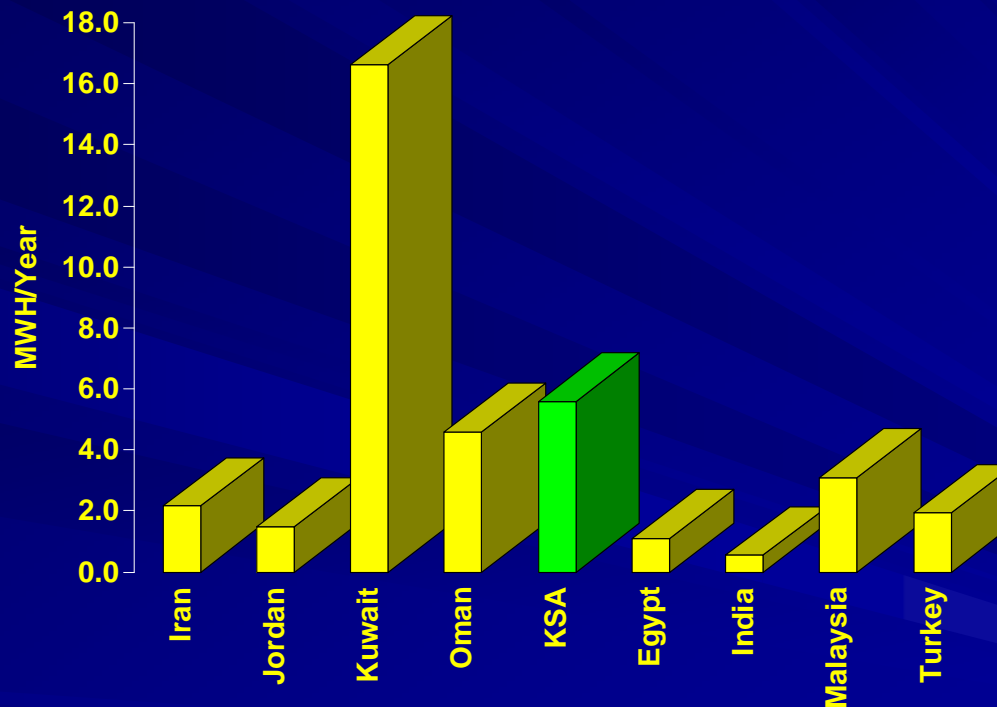
Per Capita Electricity Consumption, 2005



Source: IEA "International Energy Outlook 2006"



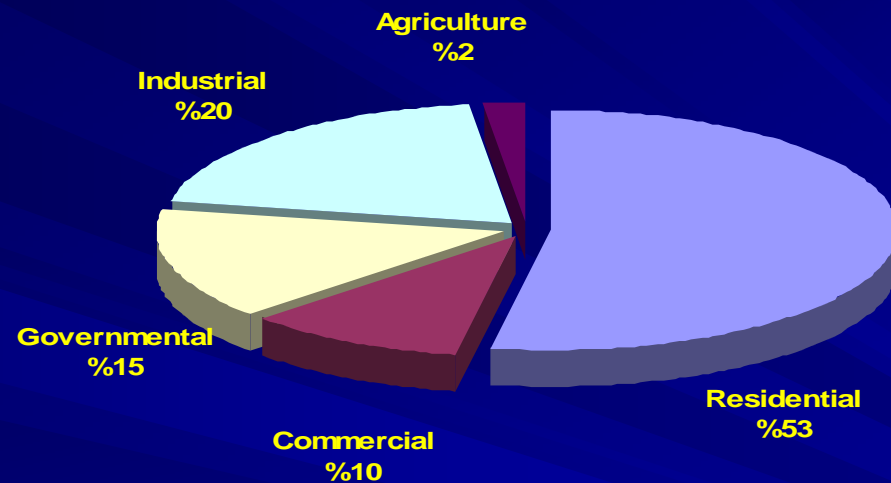
Per Capita Electricity Consumption, 2005



Source: IEA "International Energy Outlook 2006"



Per Sector Electricity Consumption KSA, 2006



Total 163.1 TWh

Situation Summary

- Rapidly increasing energy demand driven by economic and social development
- Large seasonal variation in electricity consumption
- Enormous capital required to meet demand
- Low summer generation capacity reserve margin
- Institution needed to adopt and implement a national energy efficiency strategy
- General unawareness of energy saving opportunities

Energy Efficiency Merits

- Preserve natural resources and environment
- Energy efficiency means maintaining or increasing production levels without increasing energy consumption (improving production processes)
- Reduce consumer bills
- Reduce peak demand; offset supply side investment (T&D losses mean a kWh saved is worth more than a kWh generated)
- Economic development, increase productivity, increase employment, more competitive export opportunities, stimulate energy efficiency market

Need for a National Strategy

- Achieve national energy security and sustainability
- Require efficient use of energy resources
- Build capacity into local market
- Sustain energy efficiency practices
- Contribute to reduction of adverse effect on global environment.

*EC National Plan has already finished and implementation of 13 programs has already started.

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National organizations involved in helping
to achieve our energy efficiency goals



Ministry of Water & Electricity
Ministry of Petroleum and Minerals
Ministry of Municipal & Rural Affairs
Saudi Arabian Standards Organization
Saudi Electricity & Co-generation Regulatory Authority

<http://www.neep.org.sa>

NEEP Objectives

1. Energy Audit
2. Energy Efficiency Information and Awareness
(EC Campaign has already started).
3. Load Management and TOU Tariff
4. Efficient Utilization of Oil and Gas
5. Promotion of Energy Service Industry
6. Equipment Labels and Standards Program
7. Building Codes for Energy Efficiency
8. Technical and Management Training

NEEP Achievements Include

- Conducted program of energy audits for selected buildings and facilities
- Initiated energy efficiency training and awareness programs
- Implemented a TOU tariff program for selected commercial entities
- Issued energy efficiency standards for selected household appliances
- Developed a labeling program for these appliances
- Developed energy efficiency codes for new buildings
- Established benchmarking of buildings & building services

Energy Efficiency Codes for New Buildings

- Building design using the Component Approach:
 - Building envelope requirements
 - Building mechanical systems and equipment
 - HVAC load
 - Temperature and humidity control
 - Water heating
 - Electrical power and lighting
 - Insulation

Prospective Benefits of Energy Efficiency in Buildings

- Energy-audit case studies showed annual savings in electricity consumption of at least:
 - 15% in educational buildings
 - 10% in shopping malls
 - 10% in the industrial sector
- This indicates an annual energy efficiency market of SR 1.2 billion in the above sectors alone

Market Requirements for Energy Efficiency in Buildings

- Information, awareness, and training
- Skilled personnel
- Customer willing to pay for code compliance
- Equipment & material suppliers, distributors, and importers

Conclusions....

- Electricity demand and consumption in KSA demonstrate a compelling need for energy efficiency
- NEEP established a collective effort to promote energy efficiency projects
- Prospective multi-billion SR market for energy efficiency businesses in KSA

THANK YOU.....

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